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## MEDIA RELEASE

### CTM CRC hails new 3D printing capability developed by its latest participant, the University of Wollongong

**A specialised 3D printer is being developed by the Cooperative Research Centre for Cell Therapy Manufacturing's newest participant, the University of Wollongong, to assist in the treatment of chronic diabetes.**

In an Australian first the custom built 3D bio-printer has been developed by CTM CRC's newest participant, the University of Wollongong, through their ARC Centre of Excellence for Electromaterials Science (ACES) in collaboration with CTM CRC researchers at the Royal Adelaide Hospital (RAH). The specialised printer has been used to assist in the development of a treatment for chronic diabetes by 'printing' new formulations containing living human cells called islets.

The University of Wollongong adds unique bioprinting expertise to CTM CRC's capabilities, building on its world-class biomaterials expertise.

"This collaborative project is the perfect example of the diversity this technology offers in developing cell-based therapeutics for intractable diseases. This aligns with one of CTM CRC's objectives to exploit a range of technologies towards improved cell therapies," said CTM CRC's CEO and Managing Director, Dr Sherry Kothari.

Type 1 diabetes sufferers can benefit from islet transplantation, in which donor cells can be used to produce more insulin. The procedure has been taking place since the 1990s but with limited success. Rejection of the donor cells is often a problem, making it necessary for recipients to take drugs to suppress the immune response; many of which have side effects. The new 3D bio-printer will be used to further develop formulations to 'print' new islet cells for diabetes sufferers, eventually using the patient's own cells – solving the problem of donor cell rejection.

"3D bioprinting of islet cells for potentially offers a completely new way to produce cells for transplantation. It could also enable the addition of specific cells help naturally stop rejection," Professor Toby Coates from the RAH said.

Project lead Professor Gordon Wallace at the University of Wollongong said that the project is a recent example of the successful research developed by Wollongong. Together, with the support of CTM CRC's collaborative approach this technology will offer new and exciting opportunities to work with clinicians worldwide.

“CTM CRC presents a potential commercialization pathway as the technology develops,” Professor Wallace said.

Professor Wallace and his team will demonstrate the custom 3D bio-printer and give a presentation on the future of 3D bioprinting and tissue regeneration, at a workshop today at The South Australian Health and Medical Research Institute.

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### **About the CRC for Cell Therapy Manufacturing**

Cell therapy, the use of living cells to repair, replace or regenerate diseased or damaged tissue is transforming healthcare paradigms globally. Through intervention with novel coatings and smart materials technologies, the CRC for Cell Therapy Manufacturing will introduce efficiencies in cell therapy manufacturing processes, such as cell isolation, expansion and delivery. This, in turn, will decrease costs associated with manufacturing and facilitate the rapid translation of cell therapies into clinical practice.

The CRC has a vision to increase the accessibility, affordability and efficacy of cell therapies for previously incurable, or difficult to treat conditions such as type 1 diabetes, chronic wounds and immune-mediated diseases.



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[www.ctmcrc.com](http://www.ctmcrc.com)

### **About ACES**

The ARC Centre of Excellence for Electromaterials Science (ACES) is a global leader in advanced materials and electrochemical device development. Encompassing researchers, clinicians and industry partners worldwide, ACES is uniquely positioned to translate materials research into next-generation solutions for clean energy and medical bionics.

Led by the University of Wollongong, ACES comprises 11 partners in Australia and overseas.



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[www.electromaterials.edu.au](http://www.electromaterials.edu.au)

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